CLAIMS

1. A system for detecting fire or overheating, comprising:

a sensor comprising at least one material having a resistance with a selected temperature coefficient, wherein the resistance of the material is indicative of a temperature; and

a device connected to the sensor to perform measurements on the at least one material, wherein the device is configured to determine at least one parameter from the measurements and to analyze a dynamic behaviour of the at least one parameter to deduce status information including overheating and malfunction of the sensor.

2. The system of Claim 1, wherein the sensor comprises two materials having different selected temperature coefficients.

3. The system of Claim 2, wherein a first material has a first resistance having a negative temperature coefficient, and wherein a second material has a second resistance having a positive temperature coefficient.

4. The system of Claim 3, wherein the device is configured to analyse variations in the first resistance to deduce an estimate of a sensor portion subject to overheating.

5. The system of Claim 4, wherein the device is configured to compare the estimate of the sensor portion to threshold values and to trigger a signal indicative of a malfunction of the sensor when the estimate exceeds one of the threshold values.

6. The system of Claim 3, wherein the device is configured to determine logarithmic variations in one of the first and second resistances.

7. The system of Claim 2, wherein the device is configured to compare measured values of at least one resistance with at least one first limiting value and to trigger a signal indicative of a malfunction when the measured values exceed the first limiting value.

8. The system of Claim 3, wherein the device is configured to compare the second resistance to a second limiting value that depends on the first resistance, and to trigger a signal indicative of a malfunction of the sensor when the second resistance exceeds the second limiting value.

9. The system of Claim 3, wherein the device is configured to compare the first resistance to a third limiting value that depends on the second resistance, and to trigger a signal indicative of a malfunction of the sensor when the first resistance exceeds the third limiting value.

10. The system of Claim 2, wherein the sensor comprises a conducting core that extends within a conducting sheath, wherein the first material separates the core and the sheath, wherein the second material is a wire that extends on an outside of the sheath, and wherein an insulating material separates the wire and the sheath, the central core, the sheath and the wire each being connected to a terminal.

11. The system of Claim 10, wherein the device is configured to measure according to a predetermined sequence a resistance between a terminal of the central core and a terminal of the sheath, a resistance between a terminal of the central core and a terminal of the wire, and a resistance between a terminal of the sheath and a terminal of the wire, the device further configured to use the resistance measurements to deduce an estimate of the resistance of the first material and an estimate of the resistance of the wire.

12. The system of Claim 11, wherein the device is configured to use the resistance measurements to determine at least one estimate of parasitic resistances and to trigger a signal indicative of a malfunction of the sensor when the estimate exceeds a predetermined threshold value for the parasitic resistance.

13. A method of detecting fire or overheating, comprising:

performing measurements on at least one material having a resistance with a selected temperature coefficient and comprised in a sensor coupled to a device, wherein the resistance of the material is indicative of a temperature;

determining at least one parameter from the measurements; and

analyzing a dynamic behaviour of the at least one parameter to deduce status information including overheating and malfunction of the sensor.

14. The method of Claim 13, further comprising analyzing variations in a first resistance having a negative temperature coefficient to deduce an estimate of a sensor portion subject to overheating.

15. The method of Claim 14, further comprising comparing the estimate of the sensor portion to threshold values and triggering a signal indicative of a malfunction of the sensor when the estimate exceeds a predetermined range.

16. The method of Claim 13, further comprising determining logarithmic variations in the first resistance and a second resistance of a second material having a positive temperature coefficient.

17. The method of Claim 13, further comprising comparing measured values for at least one resistance with one or more first limiting values and triggering a signal indicative of a malfunction when the measured values exceed one of the first limiting values.

18. The method of Claim 16, further comprising comparing the second resistance to a second limiting value that depends on the first resistance, and triggering a signal indicative of a malfunction of the sensor when the second resistance exceeds the second limiting value.

19. The method of Claim 16, further comprising comparing the first resistance to a third limiting value that depends on the second resistance, and triggering a signal indicative of a malfunction of the sensor when the first resistance exceeds the third limiting value.

20. The method of Claim 16, further comprising measuring according to a predetermined sequence a resistance between a terminal of a central core and a terminal of a sheath, a resistance between a terminal of the central core and a terminal of a wire, and a resistance between a terminal of the sheath and a terminal of the wire, and deducing an estimate of the resistance of the first material and an estimate of the resistance of the wire.